

This document provides pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a minor, municipal permit. The discharge results from the operation of a 0.0063 MGD wastewater treatment plant and includes an expansion flow tier of 0.01175 MGD. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained within this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

1. Facility Name and Mailing Address: Lucketts Elementary School  
21000 Education Court  
Ashburn, VA 20148  
SIC Code: 4952 WWTP  
8211 Elementary School  
  
Facility Location: 14550 James Monroe Highway  
Leesburg, VA 20176  
County: Loudoun  
  
Facility Contact Name: William Kolster  
Facility Email Address: [William.Kolster@lcps.org](mailto:William.Kolster@lcps.org)  
Telephone Number: 571-252-2960
2. Permit No.: VA0021750  
Expiration Date: 5 January 2014  
Other VPDES Permits: Not Applicable  
Other Permits: Registration ID 3008369 – Underground Petroleum Storage Tank (UST)  
E2/E3/E4 Status: Not Applicable
3. Owner Name: Loudoun County Public Schools  
Owner Contact / Title: William Kolster  
Director of Facilities Services  
Telephone Number: 571-252-2960  
Owner Email Address: [William.Kolster@lcps.org](mailto:William.Kolster@lcps.org)
4. Application Complete Date: 23 May 2013  
Permit Drafted By: Douglas Frasier  
Date Drafted: 13 June 2013  
Draft Permit Reviewed By: Alison Thompson  
Date Reviewed: 26 June 2013  
WPM Review By: Bryant Thomas  
Date Reviewed: 28 June 2013  
Public Comment Period: Start Date: 18 July 2013  
End Date: 16 August 2013
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination.  
Receiving Stream Name: Limestone Branch, UT  
Stream Code: 1aXAQ  
Drainage Area at Outfall: 0.14 square miles  
River Mile: 3.69  
Stream Basin: Potomac River  
Subbasin: Potomac River  
Section: 8  
Stream Class: III  
Special Standards: PWS  
Waterbody ID: VAN-A03R  
7Q10 Low Flow: 0.0MGD  
7Q10 High Flow: 0.0 MGD  
1Q10 Low Flow: 0.0 MGD  
1Q10 High Flow: 0.0 MGD  
30Q10 Low Flow: 0.0 MGD  
30Q10 High Flow: 0.0 MGD  
Harmonic Mean Flow: 0.0 MGD  
30Q5 Flow: 0.0 MGD
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:
 

<input checked="" type="checkbox"/> State Water Control Law <input checked="" type="checkbox"/> Clean Water Act <input checked="" type="checkbox"/> VPDES Permit Regulation <input checked="" type="checkbox"/> EPA NPDES Regulation	<input type="checkbox"/> EPA Guidelines <input checked="" type="checkbox"/> Water Quality Standards <input type="checkbox"/> Other
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7. Licensed Operator Requirements: Class IV
8. Reliability Class: Class II

**9. Permit Characterization:**

<input type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input checked="" type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

**10. Wastewater Sources and Treatment Description:**

The Lucketts Elementary School wastewater treatment plant (WWTP) serves an elementary school, consisting of approximately 300 students and staff, the Lucketts Community Center (includes a day care of approximately 60 children) and the Lucketts Volunteer Fire Station. Treatment consists of a grease trap, septic tank, dosing tank, sand filter bed, chlorine disinfection and dechlorination.

See Attachment 2 for a facility schematic/diagram.

TABLE 1 OUTFALL DESCRIPTION				
Number	Discharge Sources	Treatment	Design Flow(s)	Latitude / Longitude
001	Domestic Wastewater	See Section 10 above	0.0063 MGD 0.01175 MGD (expansion)	39° 12' 47" / 77° 31' 56"
See Attachment 3 for the Waterford topographic map.				

**11. Sludge Treatment and Disposal Methods:**

Domestic sludge is not generated on site. Septic tanks are pumped routinely by a licensed contract hauler and taken to an approved Loudoun Water facility for disposal and treatment.

**12. Discharges and Intakes Located Within the Vicinity of Discharge:**

TABLE 2 DISCHARGES AND INTAKES			
Permit Number	Facility Name	Type	Receiving Stream
VA0092380	Elysian Heights Sewage Treatment Plant	Municipal Discharge Individual Permit	Potomac River
VA0061280	Skills USA/VICA Wastewater Treatment Plant		Clarks Run
VA0074934	One Stop Trailer Park		Clarks Run
VA0074942	Hiway Mobile Home Community		Limestone Branch, UT
VA0067938	North Spring Behavioral Healthcare WWTP		Limestone Branch, UT
VA0088196	Raspberry Falls Water Reclamation Facility		Limestone Branch
VA0092282	Leesburg Water Pollution Control Facility		Potomac River
VA0090573	Beacon Hill Water Treatment Plant	Industrial Discharge Individual Permit	Limestone Branch, UT
PWSID 6107300	Town of Leesburg (upstream of discharge)	raw water intake Potomac River	
PWSID 6059501	Fairfax Water (downstream of discharge)		

**13. Material Storage:**

TABLE 3 MATERIAL STORAGE		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Hypochlorite solution	5 cases	Stored inside locked control building
Dechlorination tablets	1 5-gallon bucket	

14. **Site Inspection:** Performed by NRO Compliance Staff on 12 February 2009. See **Attachment 4** for the inspection summary.

**15. Receiving Stream Water Quality and Water Quality Standards:****a. Ambient Water Quality Data**

The facility discharges to a segment of the unnamed tributary to Limestone Branch (1aXAQ) that has not been monitored or assessed by DEQ. However, there is a DEQ monitoring station on the unnamed tributary to Limestone Branch located approximately 2.8 miles downstream of Outfall 001. Monitoring station 1aXAQ000.85 is located at the Rt. 661 bridge crossing. The following is the water quality summary for the downstream portion of the unnamed tributary, as taken from the Draft 2012 Integrated Report\*:

The following are the DEQ ambient monitoring stations located on the unnamed tributary to Limestone Branch: 1aXAQ000.85, at Route 661.

*E. coli* monitoring finds a bacteria impairment, resulting in an impaired classification for the recreation use. This impairment is nested within the downstream completed bacteria TMDL for Limestone Branch.

The aquatic life use is fully supporting; however, an observed effect for the aquatic life use is noted as citizen monitoring finds a medium probability of adverse conditions for biota.

The wildlife use is considered fully supporting.

The fish consumption and public water supply uses were not assessed.

\*Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.

**b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)**

TABLE 4 INFORMATION ON DOWNSTREAM 303(d) IMPAIRMENTS AND TMDLS						
Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA
<i>Impairment Information in the Draft 2012 Integrated Report*</i>						
Unnamed Tributary to Limestone Branch	Recreation	<i>E. coli</i>	1.7 miles	Limestone Branch Bacteria 7/6/2004 modified 9/24/08 & 3/10/10	2.05E+10 cfu/year <i>E. coli</i>	126 cfu/100mL <i>E. coli</i> --- 0.01175 MGD

\*Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.

The full planning statement is found in **Attachment 5**.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Limestone Branch, UT, is located within Section 8 of the Potomac River Basin and classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32° C and maintain a pH of 6.0 – 9.0 standard units (S.U.).

Attachments 6 and 7 detail other water quality criteria applicable to the receiving stream for the 0.0063 MGD facility and the 0.01175 MGD expansion, respectively.

Ammonia:

The fresh water, aquatic life Water Quality Criteria for ammonia is dependent on the instream pH and temperature. The 90<sup>th</sup> percentile pH and temperature values are used because they best represent the critical conditions of the receiving stream. The 30Q10 and 1Q10 of the receiving stream are 0.0 MGD. In cases such as this, effluent pH and temperature data may be used to establish the ammonia water quality standard. See Attachment 8 for effluent pH data. Since effluent temperature data is not readily available, a default value of 25° C for summer and an assumed 15° C for winter will be utilized.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream and/or the effluent hardness values (expressed as mg/L calcium carbonate). Since the 7Q10 of the receiving stream is zero and there is no ambient data available, agency guidance states that the effluent hardness may be utilized. The previous reissuance used a value of 150 mg/L CaCO<sub>3</sub>, obtained from effluent sampling, to ascertain the criteria. Given the source and lack of variability in the waste stream, it is staff's best professional judgement to utilize the aforementioned value for this reissuance.

The hardness-dependent metals criteria shown in Attachments 6 and 7 are based on this value.

Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170.A state that the following criteria shall apply to protect primary recreational uses in surface waters:

*E. coli* bacteria per 100 mL of water shall not exceed a monthly geometric mean of the following:

	Geometric Mean <sup>1</sup>
Freshwater <i>E. coli</i> (N/100 mL)	126

<sup>1</sup>For a minimum of four weekly samples taken during any calendar month.

d. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Limestone Branch, UT, is located within Section 8 of the Potomac River Basin. This section has been designated with a special standard of 'PWS'.

Special Standard 'PWS' designates a public water supply intake. The Board's Water Quality Standards establish numerical standards for specific parameters calculated to protect human health from toxic effects through drinking water and fish consumption. See 9VAC25-260-140.B. for applicable criteria.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the determination that the critical 7Q10 and 1Q10 flows for the stream are zero. The proposed permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

# **17. Effluent Screening, Wasteload Allocation and Effluent Limitation Development:**

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

## **a. Effluent Screening**

Effluent data obtained from the permit application and the February 2009 – May 2013 Discharge Monitoring Reports (DMRs) has been reviewed and determined to be suitable for evaluation.

Please see **Attachment 8** for a summary of effluent data.

## **b. Mixing Zones and Wasteload Allocations (WLAs)**

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

- WLA = Wasteload allocation
- C<sub>o</sub> = In-stream water quality criteria
- Q<sub>e</sub> = Design flow
- Q<sub>s</sub> = Critical receiving stream flow  
(1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C<sub>s</sub> = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10, 30Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C<sub>o</sub>.

## **c. Effluent Limitations and Monitoring, Outfall 001 – Toxic Pollutants**

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1). Ammonia as N/TKN:

Staff reevaluated the ammonia criteria and concluded that a reduction in the limitation was possible; however, due to antibacksliding provisions, a relaxation in the limit is not allowed based on a change in the criteria alone. Further, this facility has consistently complied with the current limit of 2.0 mg/L. Therefore, it is staff's best professional judgement that the existing ammonia limitations be carried forward with this reissuance for the 0.0063 MGD flow tier. See **Attachment 9** for the 2003 criterion development and subsequent limitation derivation.

The facility has a proposed expanded flow of 0.01175 MGD included with this reissuance. Given the facility's past performance in meeting the current ammonia limit of 2.0 mg/L, it is staff's best professional judgement that this limitation also be proposed for the expanded flow tier.

2). Total Residual Chlorine:

Chlorine is used for disinfection and is potentially present in the discharge. Staff calculated WLAs for TRC using current critical flows. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.008 mg/L and a weekly average limit of 0.010 mg/L are proposed for both the 0.0063 MGD and 0.01175 MGD facility (see **Attachment 10**).

3). Metals/Organics:

Given the wastewater sources, it is staff's best professional judgment that these pollutants are not present in appreciable amounts and that limits are not warranted.

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD<sub>5</sub>), total suspended solids (TSS), ammonia as N and pH limitations are proposed.

Dissolved oxygen and BOD<sub>5</sub> limitations were based upon a stream model conducted in 1969/1970 during the permit issuance. Model documentation is lacking; however, downstream water quality data does not indicate an adverse impact from this facility. Therefore, the existing limitations will be maintained.

It is staff's practice to equate the total suspended solids limits with the BOD<sub>5</sub> limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

*E. coli* limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e. Effluent Limitations and Monitoring Summary

The effluent limitations are presented in the following table. Limits were established for BOD<sub>5</sub>, total suspended solids, ammonia as N, pH, dissolved oxygen, *E. coli* and total residual chlorine.

The limit for total suspended solids is based on best professional judgement.

The mass loading (kg/d) for BOD<sub>5</sub> and TSS monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and then by a conversion factor of 3.785.

Sample Type and Frequency (excluding bacteria, See Section 24) are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water quality-based effluent limits and result in greater than 85% removal.

18. **Antibacksliding:**

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

**19a. Effluent Limitations/Monitoring Requirements:**

Design flow is 0.0063 MGD.

During the period beginning with the permit's effective date and lasting until the issuance of the CTO for the 0.01175 MGD facility or the expiration date, whichever occurs first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/D	Estimate
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD <sub>5</sub>	3,5	24 mg/L 0.57 kg/day	36 mg/L 0.86 kg/day	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2	24 mg/L 0.57 kg/day	36 mg/L 0.86 kg/day	NA	NA	1/M	Grab
Dissolved Oxygen (DO)	3,5	NA	NA	6.0 mg/L	NA	1/D	Grab
Ammonia, as N	2,3	2.0 mg/L	2.0 mg/L	NA	NA	1/M	Grab
<i>E. coli</i> (Geometric Mean) <sup>(a)</sup>	3,6	126 n/100mL	NA	NA	NA	1/Q <sup>(b)(c)</sup>	Grab
Total Residual Chlorine (after contact tank)	4	NA	NA	1.5 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L	0.010 mg/L	NA	NA	1/D	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model (Section 15.d.)
6. Limestone Branch Bacteria TMDL

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

1/D = Once every day.

1/M = Once every month.

1/Q = Once every calendar quarter.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

<sup>(a)</sup> Samples shall be collected between the hours of 10 A.M. and 4 P.M.

<sup>(b)</sup> See Section 21.i.

<sup>(c)</sup> The permittee shall collect four (4) weekly samples during one month within each quarterly monitoring period as defined below. The results shall be reported as the geometric mean.

The quarterly monitoring periods shall be January through March, April through June, July through September and October through December.  
The DMR shall be submitted no later than the 10<sup>th</sup> day of the month following the monitoring period.

**19b. Effluent Limitations/Monitoring Requirements:**

Design flow is 0.01175 MGD.

During the period beginning with the issuance of the CTO for the 0.01175 MGD facility and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	1/D	Estimate
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
BOD <sub>5</sub>	3,5	24 mg/L	1.1 kg/day	36 mg/L	1.6 kg/day	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2	24 mg/L	1.1 kg/day	36 mg/L	1.6 kg/day	NA	NA	1/M	Grab
Dissolved Oxygen (DO)	3,5	NA		NA		6.0 mg/L	NA	1/D	Grab
Ammonia, as N	2,3	2.0 mg/L		2.0 mg/L		NA	NA	1/M	Grab
<i>E. coli</i> (Geometric Mean) <sup>(a)</sup>	3,6	126 n/100mL		NA		NA	NA	1/Q <sup>(b) (c)</sup>	Grab
Total Residual Chlorine (after contact tank)	4	NA		NA		1.5 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L		0.010 mg/L		NA	NA	1/D	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model (Section 15.d.)
6. Limestone Branch Bacteria TMDL

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

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1/M = Once every month.

1/Q = Once every calendar quarter.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

<sup>(a)</sup> Samples shall be collected between the hours of 10 A.M. and 4 P.M.<sup>(b)</sup> See Section 21.i.<sup>(c)</sup> The permittee shall collect four (4) weekly samples during one month within each quarterly monitoring period as defined below. The results shall be reported as the geometric mean.The quarterly monitoring periods shall be January through March, April through June, July through September and October through December. The DMR shall be submitted no later than the 10<sup>th</sup> day of the month following the monitoring period.



**20. Other Permit Requirements:**

Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions

These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-70 and by the Water Quality Standards at 9VAC25-260-170. Minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more than 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be  $< 1.5$  mg/L with any TRC  $< 0.6$  mg/L considered a system failure. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

**21. Other Special Conditions:**

- a. 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.
- b. Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200.B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c. O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d. CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e. Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200.C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class IV operator.
- f. Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet Class II reliability.
- g. Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- h. Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720 and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- i. Bacteria Monitoring Frequency. If the facility exceeds the geometric mean for *E. coli* during a sampling period, then the monitoring frequency of once per week shall become effective upon written notice from DEQ for a minimum period of 30 days. The permittee may request the reduced monitoring frequency be reinstated upon demonstration of compliance for a given month.
- j. TMDL Reopener. This special condition allows the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. **Permit Section Part II.** Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.
23. **Changes to the Permit from the Previously Issued Permit:**

a. Special Conditions:

- The Bacteria Monitoring Frequency special condition was included with this reissuance.

b. Monitoring and Effluent Limitations:

- See Section 21.i. and Section 24 of this Fact Sheet.

24. **Variances/Alternate Limits or Conditions:**

The permittee submitted a written request to DEQ-NRO for a reduction in the sampling frequency for *E. coli* to once per quarter during the last permit term. The request was approved by DEQ-NRO staff and there have been no excursions reported at the 0.0063 MGD flow tier. Therefore, the permittee shall continue collecting four (4) samples during one month within each quarterly monitoring period as defined in Sections 19.a. and 19.b. of this Fact Sheet. The results shall be reported as the geometric mean.

It is staff's best professional judgement, based on the performance of this facility, that the reduction could be applied at the expanded flow tier of 0.01175 MGD as well.

25. **Public Notice Information:**

First Public Notice Date: 17 July 2013

Second Public Notice Date: 24 July 2013

Public Notice Information is required by 9VAC25-31-280.B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office; 13901 Crown Court, Woodbridge, VA 22193; Telephone No. (703) 583-3873; Douglas.Frasier@deq.virginia.gov. See **Attachment 11** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. **Additional Comments:**

Previous Board Action(s): None.

Staff Comments: None received.

Public Comment: No comments were received during the public notice.

# Fact Sheet Attachments

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Lucketts Elementary School  
VA0021750  
2014 Reissuance

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MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
Water Quality Assessments and Planning  
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination  
Luckettes Elementary School STP - #VA0021750

TO: James C. Engbert, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: June 22, 1998

COPIES: Ron Gregory, Charles Martin, File

RECEIVED

JUN 24 1998

Northern VA. Region  
Dept. of Env. Quality

This memo supercedes my June 15, 1993 memo to Joan Crowther concerning the subject VPDES permit.

The Luckettes Elementary School STP discharges to an unnamed tributary of Limestone Branch near Luckettes, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The values at the discharge point were determined by inspection of the USGS Waterford Quadrangle topographical map which shows the receiving stream as intermittent at the discharge point. The flow frequencies for intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and the harmonic mean. The drainage area above the discharge point is 0.14 mi<sup>2</sup>. For modeling purposes, flow frequencies have been determined for the first perennial reach downstream of the outfall. This occurs on the same unnamed tributary approximately 2000 feet downstream of the outfall.

The USGS conducted several flow measurements on a this unnamed tributary to Limestone Branch from 1979-1980. The measurements were made approximately 3.0 miles downstream of the discharge point at the Route 661 bridge. The measurements made by the USGS correlated very well with the same day daily mean values from the continuous record gage on Catoctin Creek near Taylorstown, VA #01638480. The measurements and daily mean values were plotted on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gage were plotted on the regression line and the associated flow frequencies at the measurement site were determined from the graph.

The flow frequencies at the discharge point were determined by using the values at the measurement site and adjusting them by proportional drainage areas. The data for the reference gage, the measurement site and the discharge point are presented below:

Attachment 1

Attachment 1

Catostin Creek at Taylorstown, VA (#01638480):

Drainage Area = 89.6 mi<sup>2</sup>  
1Q10 = 0.8 cfs                      High Flow 1Q10 = 4.6 cfs  
7Q10 = 1.1 cfs                      High Flow 7Q10 = 6.5 cfs  
30Q5 = 3.8 cfs                      HM = 18 cfs

UT to Limestone Branch at measurement site (#01643600):

Drainage Area = 6.82 mi<sup>2</sup>  
1Q10 = 0.22 cfs                      High Flow 1Q10 = 0.72 cfs  
7Q10 = 0.28 cfs                      High Flow 7Q10 = 0.90 cfs  
30Q5 = 0.63 cfs                      HM = 1.8 cfs

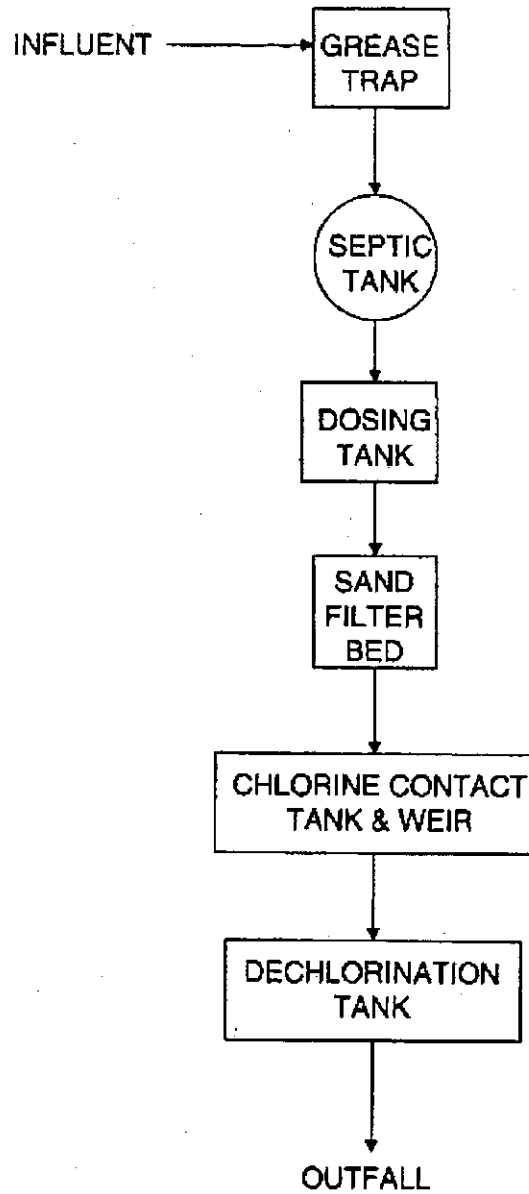
UT to Limestone Branch at perennial point:

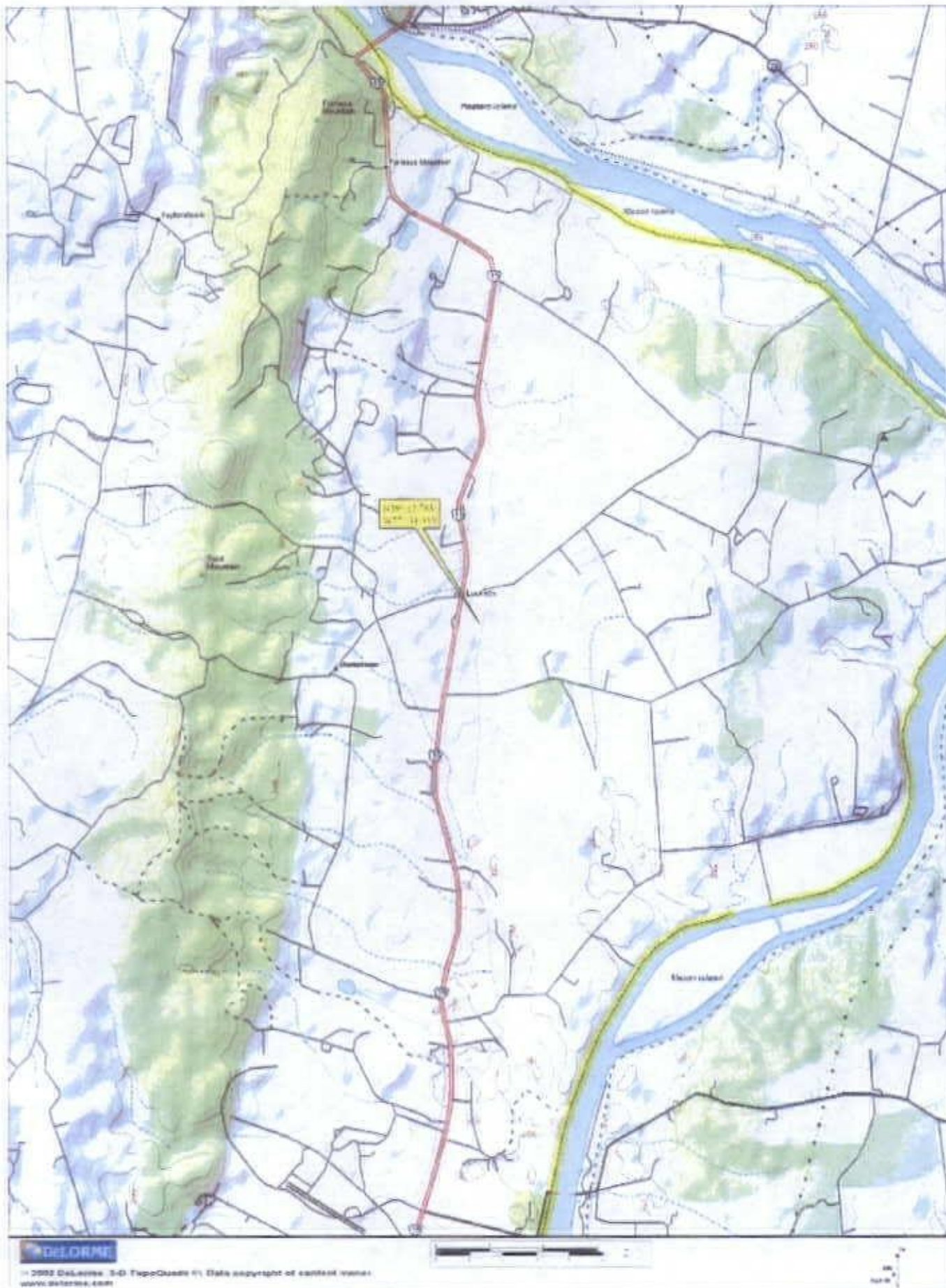
Drainage Area = 0.86 mi<sup>2</sup>  
1Q10 = 0.028 cfs                      High Flow 1Q10 = 0.091 cfs  
7Q10 = 0.035 cfs                      High Flow 7Q10 = 0.11 cfs  
30Q5 = 0.079 cfs                      HM = 0.23 cfs

This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow in unnamed tributary to Limestone Branch above the perennial point.

If there are any questions concerning this analysis, please let me know.

## LUCKETTS ELEMENTARY FLOW SCHEME





Attachment 3

Problems identified at last inspection:

**None noted.**

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### **SUMMARY**

**Comments:**

- The plant is well maintained and appears to be good condition. Recordkeeping is thorough and well organized.

**Recommendations for action:**

- Infiltration of groundwater into the dechlorination tablet feeder vault may affect sample results though dilution of the final effluent or by introducing contaminants if it enters the sample box. The infiltration points in the vault and/or discharge lines should be identified and repaired. The chlorine contact tank should also be checked for ground water infiltration.



To: Douglas Frasier  
From: Jennifer Carlson

Date: 5 June 2013  
Subject: Planning Statement for Lucketts Elementary School  
Permit Number: VA0021750

**Information for Outfall 001:**

Discharge Type:	Municipal, minor
Discharge Flow:	0.0063 MGD with expansion to 0.01175
Receiving Stream:	Limestone Branch, UT
Latitude / Longitude:	39° 12' 47" / 77° 31' 56"
Rivermile:	3.69
Streamcode:	1aXAQ
Waterbody:	VAN-A03R
Water Quality Standards:	Class III, Section 8, PWS
Drainage Area:	0.14 mi <sup>2</sup>

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

The facility discharges to a segment of the unnamed tributary to Limestone Branch (1aXAQ), that has not been monitored or assessed by DEQ. However, there is a DEQ monitoring station on the unnamed tributary to Limestone Branch located approximately 2.8 miles downstream of Outfall 001. Monitoring station 1aXAQ000.85 is located at the Rt. 661 bridge crossing. The following is the water quality summary for the downstream portion of the unnamed tributary, as taken from the Draft 2012 Integrated Report\*:

*The following are the DEQ ambient monitoring stations located on the unnamed tributary to Limestone Branch:*

- 1aXAQ000.85, at Route 661.

*E. coli monitoring finds a bacteria impairment, resulting in an impaired classification for the recreation use. This impairment is nested within the downstream completed bacteria TMDL for Limestone Branch.*

*The aquatic life use is fully supporting, however an observed effect for the aquatic life use is noted as citizen monitoring finds a medium probability of adverse conditions for biota. The wildlife use is considered fully supporting.*

*The fish consumption and public water supply uses were not assessed.*

*\*Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Yes.

**Table B. Information on Downstream 303(d) Impairments and TMDLs**

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
<b>Impairment Information in the Draft 2012 Integrated Report*</b>							
Unnamed Tributary to Limestone Branch	Recreation	<i>E. coli</i>	1.7 miles	Limestone Branch Bacteria 7/6/2004	2.05E+10 cfu/year <i>E. coli</i>	126 cfu/100ml <i>E. coli</i> --- 0.01175 MGD	TMDL modified 9/24/08 & 3/10/10

*\*Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within 5 miles of this discharge.

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Lucketts Elementary

Permit No.: VA0021750

Receiving Stream: Limestone Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	%	Mean Hardness (as CaCO3) =	150 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	%	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	%	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	%	90% Maximum pH =	7 SU
10% Maximum pH =	SU	30Q10 (Wet season) =	0 MGD	- 30Q10 Mix =	%	10% Maximum pH =	6.6 SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.0063 MGD
Public Water Supply (PWS) Y/N? =	y	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	6.7E+02	9.9E+02	--	--	6.7E+02	9.9E+02	--	--	--	--	--	--	--	--	--	--	6.7E+02	9.9E+02
Acrolein	0	--	--	6.1E+00	9.3E+00	--	--	6.1E+00	9.3E+00	--	--	--	--	--	--	--	--	--	--	6.1E+00	9.3E+00
Acrylonitrile <sup>C</sup>	0	--	--	5.1E-01	2.5E+00	--	--	5.1E-01	2.5E+00	--	--	--	--	--	--	--	--	--	--	5.1E-01	2.5E+00
Aldrin <sup>C</sup>	0	3.0E+00	--	4.9E-04	5.0E-04	3.0E+00	--	4.9E-04	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	4.9E-04	5.0E-04
Ammonia-N (mg/l)	0	3.61E+01	3.01E+00	--	--	3.61E+01	3.01E+00	--	--	--	--	--	--	--	--	--	--	3.61E+01	3.01E+00	--	--
Ammonia-N (mg/l) (High Flow)	0	3.61E+01	5.73E+00	--	--	3.61E+01	5.73E+00	--	--	--	--	--	--	--	--	--	--	3.61E+01	5.73E+00	--	--
Anthracene	0	--	--	8.3E+03	4.0E+04	--	--	8.3E+03	4.0E+04	--	--	--	--	--	--	--	--	--	--	8.3E+03	4.0E+04
Antimony	0	--	--	5.6E+00	6.4E+02	--	--	5.6E+00	6.4E+02	--	--	--	--	--	--	--	--	--	--	5.6E+00	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	1.0E+01	--	3.4E+02	1.5E+02	1.0E+01	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	1.0E+01	--
Barium	0	--	--	2.0E+03	--	--	--	2.0E+03	--	--	--	--	--	--	--	--	--	--	--	2.0E+03	--
Benzene <sup>C</sup>	0	--	--	2.2E+01	5.1E+02	--	--	2.2E+01	5.1E+02	--	--	--	--	--	--	--	--	--	--	2.2E+01	5.1E+02
Benzidine <sup>C</sup>	0	--	--	8.6E-04	2.0E-03	--	--	8.6E-04	2.0E-03	--	--	--	--	--	--	--	--	--	--	8.6E-04	2.0E-03
Benzo (a) anthracene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (a) pyrene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Bis(2-Chloroethyl) Ether <sup>C</sup>	0	--	--	3.0E-01	5.3E+00	--	--	3.0E-01	5.3E+00	--	--	--	--	--	--	--	--	--	--	3.0E-01	5.3E+00
Bis(2-Chloroisopropyl) Ether	0	--	--	1.4E+03	6.5E+04	--	--	1.4E+03	6.5E+04	--	--	--	--	--	--	--	--	--	--	1.4E+03	6.5E+04
Bis 2-Ethylhexyl Phthalate <sup>C</sup>	0	--	--	1.2E+01	2.2E+01	--	--	1.2E+01	2.2E+01	--	--	--	--	--	--	--	--	--	--	1.2E+01	2.2E+01
Bromofom <sup>C</sup>	0	--	--	4.3E+01	1.4E+03	--	--	4.3E+01	1.4E+03	--	--	--	--	--	--	--	--	--	--	4.3E+01	1.4E+03
Bis(2-benzyl)phthalate	0	--	--	1.5E+03	1.9E+03	--	--	1.5E+03	1.9E+03	--	--	--	--	--	--	--	--	--	--	1.5E+03	1.9E+03
Barium	0	6.2E+00	1.6E+00	5.0E+00	--	6.2E+00	1.6E+00	5.0E+00	--	--	--	--	--	--	--	--	--	6.2E+00	1.6E+00	5.0E+00	--
γ-Hexachlorocyclopentadiene <sup>C</sup>	0	--	--	2.3E+00	1.6E+01	--	--	2.3E+00	1.6E+01	--	--	--	--	--	--	--	--	--	--	2.3E+00	1.6E+01
Chlordane <sup>C</sup>	0	2.4E+00	4.3E-03	8.0E-03	8.1E-03	2.4E+00	4.3E-03	8.0E-03	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	8.0E-03	8.1E-03
Dieldrin <sup>C</sup>	0	8.6E+05	2.3E+05	2.5E+05	--	8.6E+05	2.3E+05	2.5E+05	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	2.5E+05	--
Dibenzodioxin <sup>C</sup>	0	1.9E+01	1.1E+01	--	--	1.9E+01	1.1E+01	--	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	--	--
Dibenzofuran <sup>C</sup>	0	--	--	1.3E+02	1.6E+03	--	--	1.3E+02	1.6E+03	--	--	--	--	--	--	--	--	--	--	1.3E+02	1.6E+03

Attachment 6

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>c</sup>	0	--	--	4.0E+00	1.3E+02	--	--	4.0E+00	1.3E+02	--	--	--	--	--	--	--	--	--	--	4.0E+00	1.3E+02
Chloroform	0	--	--	3.4E+02	1.1E+04	--	--	3.4E+02	1.1E+04	--	--	--	--	--	--	--	--	--	--	3.4E+02	1.1E+04
2-Chloronaphthalene	0	--	--	1.0E+03	1.6E+03	--	--	1.0E+03	1.6E+03	--	--	--	--	--	--	--	--	--	--	1.0E+03	1.6E+03
2-Chlorophenol	0	--	--	8.1E+01	1.5E+02	--	--	8.1E+01	1.5E+02	--	--	--	--	--	--	--	--	--	--	8.1E+01	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	--	--	8.3E-02	4.1E-02	--	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	--	--
Chromium III	0	7.9E+02	1.0E+02	--	--	7.9E+02	1.0E+02	--	--	--	--	--	--	--	--	--	--	7.9E+02	1.0E+02	--	--
Chromium VI	0	1.6E+01	1.1E+01	--	--	1.6E+01	1.1E+01	--	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	--	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	--	--	--	--	--	--	--	--	1.0E+02	--
Chrysene <sup>c</sup>	0	--	--	3.8E-03	1.8E-02	--	--	3.8E-03	1.8E-02	--	--	--	--	--	--	--	--	--	--	3.8E-03	1.8E-02
Copper	0	2.0E+01	1.3E+01	1.3E+03	--	2.0E+01	1.3E+01	1.3E+03	--	--	--	--	--	--	--	--	--	2.0E+01	1.3E+01	1.3E+03	--
Cyanide, Free	0	2.2E+01	5.2E+00	1.4E+02	1.6E+04	2.2E+01	5.2E+00	1.4E+02	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	1.4E+02	1.6E+04
DDD <sup>c</sup>	0	--	--	3.1E-03	3.1E-03	--	--	3.1E-03	3.1E-03	--	--	--	--	--	--	--	--	--	--	3.1E-03	3.1E-03
DDE <sup>c</sup>	0	--	--	2.2E-03	2.2E-03	--	--	2.2E-03	2.2E-03	--	--	--	--	--	--	--	--	--	--	2.2E-03	2.2E-03
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	1.1E+00	1.0E-03	2.2E-03	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	2.2E-03	2.2E-03
Demeton	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	--	--	--	--	--	--	--	--	1.0E-01	--	--
Diazinon	0	1.7E-01	1.7E-01	--	--	1.7E-01	1.7E-01	--	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	--	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
1,2-Dichlorobenzene	0	--	--	4.2E+02	1.3E+03	--	--	4.2E+02	1.3E+03	--	--	--	--	--	--	--	--	--	--	4.2E+02	1.3E+03
1,3-Dichlorobenzene	0	--	--	3.2E+02	9.6E+02	--	--	3.2E+02	9.6E+02	--	--	--	--	--	--	--	--	--	--	3.2E+02	9.6E+02
1,4-Dichlorobenzene	0	--	--	6.3E+01	1.9E+02	--	--	6.3E+01	1.9E+02	--	--	--	--	--	--	--	--	--	--	6.3E+01	1.9E+02
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	2.1E-01	2.8E-01	--	--	2.1E-01	2.8E-01	--	--	--	--	--	--	--	--	--	--	2.1E-01	2.8E-01
Dichlorobromomethane <sup>c</sup>	0	--	--	5.5E+00	1.7E+02	--	--	5.5E+00	1.7E+02	--	--	--	--	--	--	--	--	--	--	5.5E+00	1.7E+02
1,2-Dichloroethane <sup>c</sup>	0	--	--	3.8E+00	3.7E+02	--	--	3.8E+00	3.7E+02	--	--	--	--	--	--	--	--	--	--	3.8E+00	3.7E+02
1,1-Dichloroethylene	0	--	--	3.3E+02	7.1E+03	--	--	3.3E+02	7.1E+03	--	--	--	--	--	--	--	--	--	--	3.3E+02	7.1E+03
1,2-trans-dichloroethylene	0	--	--	1.4E+02	1.0E+04	--	--	1.4E+02	1.0E+04	--	--	--	--	--	--	--	--	--	--	1.4E+02	1.0E+04
2,4-Dichlorophenol	0	--	--	7.7E+01	2.9E+02	--	--	7.7E+01	2.9E+02	--	--	--	--	--	--	--	--	--	--	7.7E+01	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	--	--	--	--	--	--	--	--	1.0E+02	--
1,2-Dichloropropane <sup>c</sup>	0	--	--	5.0E+00	1.5E+02	--	--	5.0E+00	1.5E+02	--	--	--	--	--	--	--	--	--	--	5.0E+00	1.5E+02
1,3-Dichloropropene <sup>c</sup>	0	--	--	3.4E+00	2.1E+02	--	--	3.4E+00	2.1E+02	--	--	--	--	--	--	--	--	--	--	3.4E+00	2.1E+02
Dieldrin <sup>c</sup>	0	2.4E-01	5.6E-02	5.2E-04	5.4E-04	2.4E-01	5.6E-02	5.2E-04	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	5.2E-04	5.4E-04
Diethyl Phthalate	0	--	--	1.7E+04	4.4E+04	--	--	1.7E+04	4.4E+04	--	--	--	--	--	--	--	--	--	--	1.7E+04	4.4E+04
2,4-Dimethylphenol	0	--	--	3.8E+02	8.5E+02	--	--	3.8E+02	8.5E+02	--	--	--	--	--	--	--	--	--	--	3.8E+02	8.5E+02
Dimethyl Phthalate	0	--	--	2.7E+05	1.1E+06	--	--	2.7E+05	1.1E+06	--	--	--	--	--	--	--	--	--	--	2.7E+05	1.1E+06
Di-n-Butyl Phthalate	0	--	--	2.0E+03	4.5E+03	--	--	2.0E+03	4.5E+03	--	--	--	--	--	--	--	--	--	--	2.0E+03	4.5E+03
2,4-Dinitrophenol	0	--	--	6.9E+01	5.3E+03	--	--	6.9E+01	5.3E+03	--	--	--	--	--	--	--	--	--	--	6.9E+01	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	1.3E+01	2.8E+02	--	--	1.3E+01	2.8E+02	--	--	--	--	--	--	--	--	--	--	1.3E+01	2.8E+02
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	1.1E+00	3.4E+01	--	--	1.1E+00	3.4E+01	--	--	--	--	--	--	--	--	--	--	1.1E+00	3.4E+01
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	5.0E-08	5.1E-08	--	--	5.0E-08	5.1E-08	--	--	--	--	--	--	--	--	--	--	5.0E-08	5.1E-08
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	3.6E-01	2.0E+00	--	--	3.6E-01	2.0E+00	--	--	--	--	--	--	--	--	--	--	3.6E-01	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	6.2E+01	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	6.2E+01	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	6.2E+01	8.9E+01	--	--	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	--	--	6.2E+01	8.9E+01
Endrin	0	8.6E-02	3.6E-02	5.9E-02	6.0E-02	8.6E-02	3.6E-02	5.9E-02	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	5.9E-02	6.0E-02
Endrin Aldehyde	0	--	--	2.9E-01	3.0E-01	--	--	2.9E-01	3.0E-01	--	--	--	--	--	--	--	--	--	--	2.9E-01	3.0E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	5.3E+02	2.1E+03	--	--	5.3E+02	2.1E+03	--	--	--	--	--	--	--	--	--	--	5.3E+02	2.1E+03
Fluoranthene	0	--	--	1.3E+02	1.4E+02	--	--	1.3E+02	1.4E+02	--	--	--	--	--	--	--	--	--	--	1.3E+02	1.4E+02
Fluorene	0	--	--	1.1E+03	5.3E+03	--	--	1.1E+03	5.3E+03	--	--	--	--	--	--	--	--	--	--	1.1E+03	5.3E+03
Foaming Agents	0	--	--	5.0E+02	--	--	--	5.0E+02	--	--	--	--	--	--	--	--	--	--	--	5.0E+02	--
Guthion	0	--	1.0E-02	--	--	--	1.0E-02	--	--	--	--	--	--	--	--	--	--	--	1.0E-02	--	--
Heptachlor <sup>C</sup>	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	5.2E-01	3.8E-03	7.9E-04	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	7.9E-04	7.9E-04
Heptachlor Epoxide <sup>C</sup>	0	5.2E-01	3.8E-03	3.9E-04	3.9E-04	5.2E-01	3.8E-03	3.9E-04	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	3.9E-04	3.9E-04
Hexachlorobenzene <sup>C</sup>	0	--	--	2.8E-03	2.9E-03	--	--	2.8E-03	2.9E-03	--	--	--	--	--	--	--	--	--	--	2.8E-03	2.9E-03
Hexachlorobutadiene <sup>C</sup>	0	--	--	4.4E+00	1.8E+02	--	--	4.4E+00	1.8E+02	--	--	--	--	--	--	--	--	--	--	4.4E+00	1.8E+02
Hexachlorocyclohexane Alpha-BHC <sup>C</sup>	0	--	--	2.6E-02	4.9E-02	--	--	2.6E-02	4.9E-02	--	--	--	--	--	--	--	--	--	--	2.6E-02	4.9E-02
Hexachlorocyclohexane Beta-BHC <sup>C</sup>	0	--	--	9.1E-02	1.7E-01	--	--	9.1E-02	1.7E-01	--	--	--	--	--	--	--	--	--	--	9.1E-02	1.7E-01
Hexachlorocyclohexane Gamma-BHC <sup>C</sup> (Lindane)	0	9.5E-01	--	9.8E-01	1.8E+00	9.5E-01	--	9.8E-01	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	9.8E-01	1.8E+00
Hexachlorocyclopentadiene	0	--	--	4.0E+01	1.1E+03	--	--	4.0E+01	1.1E+03	--	--	--	--	--	--	--	--	--	--	4.0E+01	1.1E+03
Hexachloroethane <sup>C</sup>	0	--	--	1.4E+01	3.3E+01	--	--	1.4E+01	3.3E+01	--	--	--	--	--	--	--	--	--	--	1.4E+01	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	--	--	--	2.0E+00	--	--	--	--	--	--	--	--	--	--	--	2.0E+00	--	--
Indeno (1,2,3-cd) pyrene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Iron	0	--	--	3.0E+02	--	--	--	3.0E+02	--	--	--	--	--	--	--	--	--	--	--	3.0E+02	--
Isophorone <sup>C</sup>	0	--	--	3.5E+02	9.6E+03	--	--	3.5E+02	9.6E+03	--	--	--	--	--	--	--	--	--	--	3.5E+02	9.6E+03
Kepone	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	--	--	--	--	--	--	--	--	0.0E+00	--	--
Lead	0	2.0E+02	2.3E+01	1.5E+01	--	2.0E+02	2.3E+01	1.5E+01	--	--	--	--	--	--	--	--	--	2.0E+02	2.3E+01	1.5E+01	--
Malathion	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	--	--	--	--	--	--	--	--	1.0E-01	--	--
Manganese	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	--	--	--	--	--	--	--	--	5.0E+01	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	4.7E+01	1.5E+03	--	--	4.7E+01	1.5E+03	--	--	--	--	--	--	--	--	--	--	4.7E+01	1.5E+03
Methylene Chloride <sup>C</sup>	0	--	--	4.6E+01	5.9E+03	--	--	4.6E+01	5.9E+03	--	--	--	--	--	--	--	--	--	--	4.6E+01	5.9E+03
Methoxychlor	0	--	3.0E-02	1.0E+02	--	--	3.0E-02	1.0E+02	--	--	--	--	--	--	--	--	--	--	3.0E-02	1.0E+02	--
Mirex	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	--	--	--	--	--	--	--	--	0.0E+00	--	--
Nickel	0	2.6E+02	2.9E+01	6.1E+02	4.6E+03	2.6E+02	2.9E+01	6.1E+02	4.6E+03	--	--	--	--	--	--	--	--	2.6E+02	2.9E+01	6.1E+02	4.6E+03
Nitrate (as N)	0	--	--	1.0E+04	--	--	--	1.0E+04	--	--	--	--	--	--	--	--	--	--	--	1.0E+04	--
Nitrobenzene	0	--	--	1.7E+01	6.9E+02	--	--	1.7E+01	6.9E+02	--	--	--	--	--	--	--	--	--	--	1.7E+01	6.9E+02
N-Nitrosodimethylamine <sup>C</sup>	0	--	--	6.9E-03	3.0E+01	--	--	6.9E-03	3.0E+01	--	--	--	--	--	--	--	--	--	--	6.9E-03	3.0E+01
N-Nitrosodiphenylamine <sup>C</sup>	0	--	--	3.3E+01	6.0E+01	--	--	3.3E+01	6.0E+01	--	--	--	--	--	--	--	--	--	--	3.3E+01	6.0E+01
N-Nitrosodi-n-propylamine <sup>C</sup>	0	--	--	5.0E-02	5.1E+00	--	--	5.0E-02	5.1E+00	--	--	--	--	--	--	--	--	--	--	5.0E-02	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	--	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	--	--
Parathion	0	6.5E-02	1.3E-02	--	--	6.5E-02	1.3E-02	--	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	--	--
PCB Total <sup>C</sup>	0	--	1.4E-02	6.4E-04	6.4E-04	--	1.4E-02	6.4E-04	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	6.4E-04	6.4E-04
Pentachlorophenol <sup>C</sup>	0	5.8E+00	4.5E+00	2.7E+00	3.0E+01	5.8E+00	4.5E+00	2.7E+00	3.0E+01	--	--	--	--	--	--	--	--	5.8E+00	4.5E+00	2.7E+00	3.0E+01
Phenol	0	--	--	1.0E+04	8.6E+05	--	--	1.0E+04	8.6E+05	--	--	--	--	--	--	--	--	--	--	1.0E+04	8.6E+05
Pyrene	0	--	--	8.3E+02	4.0E+03	--	--	8.3E+02	4.0E+03	--	--	--	--	--	--	--	--	--	--	8.3E+02	4.0E+03
Radionuclides Gross Alpha Activity (pCi/L)	0	--	--	1.5E+01	--	--	--	1.5E+01	--	--	--	--	--	--	--	--	--	--	--	1.5E+01	--
Beta and Photon Activity (mrem/yr)	0	--	--	4.0E+00	4.0E+00	--	--	4.0E+00	4.0E+00	--	--	--	--	--	--	--	--	--	--	4.0E+00	4.0E+00
Radium 226 + 228 (pCi/L)	0	--	--	5.0E+00	--	--	--	5.0E+00	--	--	--	--	--	--	--	--	--	--	--	5.0E+00	--
Uranium (ug/l)	0	--	--	3.0E+01	--	--	--	3.0E+01	--	--	--	--	--	--	--	--	--	--	--	3.0E+01	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	2.0E+01	5.0E+00	1.7E+02	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	1.7E+02	4.2E+03
Silver	0	6.9E+00	--	--	--	6.9E+00	--	--	--	--	--	--	--	--	--	--	--	6.9E+00	--	--	--
Sulfate	0	--	--	2.5E+05	--	--	--	2.5E+05	--	--	--	--	--	--	--	--	--	--	--	2.5E+05	--
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	1.7E+00	4.0E+01	--	--	1.7E+00	4.0E+01	--	--	--	--	--	--	--	--	--	--	1.7E+00	4.0E+01
Tetrachloroethylene <sup>C</sup>	0	--	--	6.9E+00	3.3E+01	--	--	6.9E+00	3.3E+01	--	--	--	--	--	--	--	--	--	--	6.9E+00	3.3E+01
Thallium	0	--	--	2.4E-01	4.7E-01	--	--	2.4E-01	4.7E-01	--	--	--	--	--	--	--	--	--	--	2.4E-01	4.7E-01
Toluene	0	--	--	5.1E+02	6.0E+03	--	--	5.1E+02	6.0E+03	--	--	--	--	--	--	--	--	--	--	5.1E+02	6.0E+03
Total dissolved solids	0	--	--	5.0E+05	--	--	--	5.0E+05	--	--	--	--	--	--	--	--	--	--	--	5.0E+05	--
Toxaphene <sup>C</sup>	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	7.3E-01	2.0E-04	2.8E-03	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	2.8E-03	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	--	--	4.6E-01	7.2E-02	--	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	--	--
1,2,4-Trichlorobenzene	0	--	--	3.5E+01	7.0E+01	--	--	3.5E+01	7.0E+01	--	--	--	--	--	--	--	--	--	--	3.5E+01	7.0E+01
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	5.9E+00	1.6E+02	--	--	5.9E+00	1.6E+02	--	--	--	--	--	--	--	--	--	--	5.9E+00	1.6E+02
Trichloroethylene <sup>C</sup>	0	--	--	2.5E+01	3.0E+02	--	--	2.5E+01	3.0E+02	--	--	--	--	--	--	--	--	--	--	2.5E+01	3.0E+02
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	1.4E+01	2.4E+01	--	--	1.4E+01	2.4E+01	--	--	--	--	--	--	--	--	--	--	1.4E+01	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	--	--	--	--	--	--	--	--	5.0E+01	--
Vinyl Chloride <sup>C</sup>	0	--	--	2.5E-01	2.4E+01	--	--	2.5E-01	2.4E+01	--	--	--	--	--	--	--	--	--	--	2.5E-01	2.4E+01
Zinc	0	1.7E+02	1.7E+02	7.4E+03	2.6E+04	1.7E+02	1.7E+02	7.4E+03	2.6E+04	--	--	--	--	--	--	--	--	1.7E+02	1.7E+02	7.4E+03	2.6E+04

- Notes:
- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
  - Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
  - Metals measured as Dissolved, unless specified otherwise
  - "C" indicates a carcinogenic parameter
  - Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.
  - Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
  - WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)	Note: do not use QL's lower than the minimum QL's provided in agency guidance
Antimony	5.6E+00	
Arsenic	1.0E+01	
Barium	2.0E+03	
Cadmium	9.4E-01	
Chromium III	6.2E+01	
Chromium VI	6.4E+00	
Copper	7.6E+00	
Iron	3.0E+02	
Lead	1.4E+01	
Manganese	5.0E+01	
Mercury	4.6E-01	
Nickel	1.7E+01	
Selenium	3.0E+00	
Silver	2.8E+00	
Zinc	6.6E+01	

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Lucketts Elementary

Permit No.: VA0021750

Receiving Stream: Limestone Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO <sub>3</sub> ) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	%	Mean Hardness (as CaCO <sub>3</sub> ) =	150 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	%	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	%	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	%	90% Maximum pH =	7 SU
10% Maximum pH =	SU	30Q10 (Wet season) =	0 MGD	- 30Q10 Mix =	%	10% Maximum pH =	6.6 SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.01175 MGD
Public Water Supply (PWS) Y/N? =	y	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	6.7E+02	9.9E+02	--	--	6.7E+02	9.9E+02	--	--	--	--	--	--	--	--	--	--	6.7E+02	9.9E+02
Acrolein	0	--	--	6.1E+00	9.3E+00	--	--	6.1E+00	9.3E+00	--	--	--	--	--	--	--	--	--	--	6.1E+00	9.3E+00
Acrylonitrile <sup>C</sup>	0	--	--	5.1E-01	2.5E+00	--	--	5.1E-01	2.5E+00	--	--	--	--	--	--	--	--	--	--	5.1E-01	2.5E+00
Aldrin <sup>C</sup>	0	3.0E+00	--	4.9E-04	5.0E-04	3.0E+00	--	4.9E-04	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	4.9E-04	5.0E-04
Ammonia-N (mg/l)																					
(Yearly)	0	3.61E+01	3.01E+00	--	--	3.61E+01	3.01E+00	--	--	--	--	--	--	--	--	--	--	3.61E+01	3.01E+00	--	--
Ammonia-N (mg/l)																					
(High Flow)	0	3.61E+01	5.73E+00	--	--	3.61E+01	5.73E+00	--	--	--	--	--	--	--	--	--	--	3.61E+01	5.73E+00	--	--
Anthracene	0	--	--	8.3E+03	4.0E+04	--	--	8.3E+03	4.0E+04	--	--	--	--	--	--	--	--	--	--	8.3E+03	4.0E+04
Antimony	0	--	--	5.6E+00	6.4E+02	--	--	5.6E+00	6.4E+02	--	--	--	--	--	--	--	--	--	--	5.6E+00	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	1.0E+01	--	3.4E+02	1.5E+02	1.0E+01	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	1.0E+01	--
Barium	0	--	--	2.0E+03	--	--	--	2.0E+03	--	--	--	--	--	--	--	--	--	--	--	2.0E+03	--
Benzene <sup>C</sup>	0	--	--	2.2E+01	5.1E+02	--	--	2.2E+01	5.1E+02	--	--	--	--	--	--	--	--	--	--	2.2E+01	5.1E+02
Benzidine <sup>C</sup>	0	--	--	8.6E-04	2.0E-03	--	--	8.6E-04	2.0E-03	--	--	--	--	--	--	--	--	--	--	8.6E-04	2.0E-03
Benzo (a) anthracene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (a) pyrene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Bis(2-Chloroethyl) Ether <sup>C</sup>	0	--	--	3.0E-01	5.3E+00	--	--	3.0E-01	5.3E+00	--	--	--	--	--	--	--	--	--	--	3.0E-01	5.3E+00
Bis(2-Chloroisopropyl) Ether	0	--	--	1.4E+03	6.5E+04	--	--	1.4E+03	6.5E+04	--	--	--	--	--	--	--	--	--	--	1.4E+03	6.5E+04
Bis 2-Ethylhexyl Phthalate <sup>C</sup>	0	--	--	1.2E+01	2.2E+01	--	--	1.2E+01	2.2E+01	--	--	--	--	--	--	--	--	--	--	1.2E+01	2.2E+01
Bromoform <sup>C</sup>	0	--	--	4.3E+01	1.4E+03	--	--	4.3E+01	1.4E+03	--	--	--	--	--	--	--	--	--	--	4.3E+01	1.4E+03
Bis(4-benzyl)phthalate	0	--	--	1.5E+03	1.9E+03	--	--	1.5E+03	1.9E+03	--	--	--	--	--	--	--	--	--	--	1.5E+03	1.9E+03
Cadmium	0	6.2E+00	1.6E+00	5.0E+00	--	6.2E+00	1.6E+00	5.0E+00	--	--	--	--	--	--	--	--	--	6.2E+00	1.6E+00	5.0E+00	--
Carbon Tetrachloride <sup>C</sup>	0	--	--	2.3E+00	1.6E+01	--	--	2.3E+00	1.6E+01	--	--	--	--	--	--	--	--	--	--	2.3E+00	1.6E+01
Chlordane <sup>C</sup>	0	2.4E+00	4.3E-03	8.0E-03	8.1E-03	2.4E+00	4.3E-03	8.0E-03	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	8.0E-03	8.1E-03
Cyfluthrin <sup>C</sup>	0	8.6E+05	2.3E+05	2.5E+05	--	8.6E+05	2.3E+05	2.5E+05	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	2.5E+05	--
Dieldrin <sup>C</sup>	0	1.9E+01	1.1E+01	--	--	1.9E+01	1.1E+01	--	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	--	--
Diobenzene	0	--	--	1.3E+02	1.6E+03	--	--	1.3E+02	1.6E+03	--	--	--	--	--	--	--	--	--	--	1.3E+02	1.6E+03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>C</sup>	0	--	--	4.0E+00	1.3E+02	--	--	4.0E+00	1.3E+02	--	--	--	--	--	--	--	--	--	--	4.0E+00	1.3E+02
Chloroform	0	--	--	3.4E+02	1.1E+04	--	--	3.4E+02	1.1E+04	--	--	--	--	--	--	--	--	--	--	3.4E+02	1.1E+04
2-Chloronaphthalene	0	--	--	1.0E+03	1.6E+03	--	--	1.0E+03	1.6E+03	--	--	--	--	--	--	--	--	--	--	1.0E+03	1.6E+03
2-Chlorophenol	0	--	--	8.1E+01	1.5E+02	--	--	8.1E+01	1.5E+02	--	--	--	--	--	--	--	--	--	--	8.1E+01	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	--	--	8.3E-02	4.1E-02	--	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	--	--
Chromium III	0	7.9E+02	1.0E+02	--	--	7.9E+02	1.0E+02	--	--	--	--	--	--	--	--	--	--	7.9E+02	1.0E+02	--	--
Chromium VI	0	1.6E+01	1.1E+01	--	--	1.6E+01	1.1E+01	--	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	--	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	--	--	--	--	--	--	--	--	1.0E+02	--
Chrysene <sup>C</sup>	0	--	--	3.8E-03	1.8E-02	--	--	3.8E-03	1.8E-02	--	--	--	--	--	--	--	--	--	--	3.8E-03	1.8E-02
Copper	0	2.0E+01	1.3E+01	1.3E+03	--	2.0E+01	1.3E+01	1.3E+03	--	--	--	--	--	--	--	--	--	2.0E+01	1.3E+01	1.3E+03	--
Cyanide, Free	0	2.2E+01	5.2E+00	1.4E+02	1.6E+04	2.2E+01	5.2E+00	1.4E+02	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	1.4E+02	1.6E+04
DDD <sup>C</sup>	0	--	--	3.1E-03	3.1E-03	--	--	3.1E-03	3.1E-03	--	--	--	--	--	--	--	--	--	--	3.1E-03	3.1E-03
DDE <sup>C</sup>	0	--	--	2.2E-03	2.2E-03	--	--	2.2E-03	2.2E-03	--	--	--	--	--	--	--	--	--	--	2.2E-03	2.2E-03
DDT <sup>C</sup>	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	1.1E+00	1.0E-03	2.2E-03	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	2.2E-03	2.2E-03
Demeton	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	--	--	--	--	--	--	--	--	1.0E-01	--	--
Diazinon	0	1.7E-01	1.7E-01	--	--	1.7E-01	1.7E-01	--	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	--	--
Dibenz(a,h)anthracene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
1,2-Dichlorobenzene	0	--	--	4.2E+02	1.3E+03	--	--	4.2E+02	1.3E+03	--	--	--	--	--	--	--	--	--	--	4.2E+02	1.3E+03
1,3-Dichlorobenzene	0	--	--	3.2E+02	9.6E+02	--	--	3.2E+02	9.6E+02	--	--	--	--	--	--	--	--	--	--	3.2E+02	9.6E+02
1,4-Dichlorobenzene	0	--	--	6.3E+01	1.9E+02	--	--	6.3E+01	1.9E+02	--	--	--	--	--	--	--	--	--	--	6.3E+01	1.9E+02
3,3-Dichlorobenzidine <sup>C</sup>	0	--	--	2.1E-01	2.8E-01	--	--	2.1E-01	2.8E-01	--	--	--	--	--	--	--	--	--	--	2.1E-01	2.8E-01
Dichlorobromomethane <sup>C</sup>	0	--	--	5.5E+00	1.7E+02	--	--	5.5E+00	1.7E+02	--	--	--	--	--	--	--	--	--	--	5.5E+00	1.7E+02
1,2-Dichloroethane <sup>C</sup>	0	--	--	3.8E+00	3.7E+02	--	--	3.8E+00	3.7E+02	--	--	--	--	--	--	--	--	--	--	3.8E+00	3.7E+02
1,1-Dichloroethylene	0	--	--	3.3E+02	7.1E+03	--	--	3.3E+02	7.1E+03	--	--	--	--	--	--	--	--	--	--	3.3E+02	7.1E+03
1,2-trans-dichloroethylene	0	--	--	1.4E+02	1.0E+04	--	--	1.4E+02	1.0E+04	--	--	--	--	--	--	--	--	--	--	1.4E+02	1.0E+04
2,4-Dichlorophenol	0	--	--	7.7E+01	2.9E+02	--	--	7.7E+01	2.9E+02	--	--	--	--	--	--	--	--	--	--	7.7E+01	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	--	--	--	--	--	--	--	--	1.0E+02	--
1,2-Dichloropropane <sup>C</sup>	0	--	--	5.0E+00	1.5E+02	--	--	5.0E+00	1.5E+02	--	--	--	--	--	--	--	--	--	--	5.0E+00	1.5E+02
1,3-Dichloropropene <sup>C</sup>	0	--	--	3.4E+00	2.1E+02	--	--	3.4E+00	2.1E+02	--	--	--	--	--	--	--	--	--	--	3.4E+00	2.1E+02
Dieldrin <sup>C</sup>	0	2.4E-01	5.6E-02	5.2E-04	5.4E-04	2.4E-01	5.6E-02	5.2E-04	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	5.2E-04	5.4E-04
Diethyl Phthalate	0	--	--	1.7E+04	4.4E+04	--	--	1.7E+04	4.4E+04	--	--	--	--	--	--	--	--	--	--	1.7E+04	4.4E+04
2,4-Dimethylphenol	0	--	--	3.8E+02	8.5E+02	--	--	3.8E+02	8.5E+02	--	--	--	--	--	--	--	--	--	--	3.8E+02	8.5E+02
Dimethyl Phthalate	0	--	--	2.7E+05	1.1E+06	--	--	2.7E+05	1.1E+06	--	--	--	--	--	--	--	--	--	--	2.7E+05	1.1E+06
Di-n-Butyl Phthalate	0	--	--	2.0E+03	4.5E+03	--	--	2.0E+03	4.5E+03	--	--	--	--	--	--	--	--	--	--	2.0E+03	4.5E+03
2,4 Dinitrophenol	0	--	--	6.9E+01	5.3E+03	--	--	6.9E+01	5.3E+03	--	--	--	--	--	--	--	--	--	--	6.9E+01	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	1.3E+01	2.8E+02	--	--	1.3E+01	2.8E+02	--	--	--	--	--	--	--	--	--	--	1.3E+01	2.8E+02
2,4-Dinitrotoluene <sup>C</sup>	0	--	--	1.1E+00	3.4E+01	--	--	1.1E+00	3.4E+01	--	--	--	--	--	--	--	--	--	--	1.1E+00	3.4E+01
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	5.0E-08	5.1E-08	--	--	5.0E-08	5.1E-08	--	--	--	--	--	--	--	--	--	--	5.0E-08	5.1E-08
1,2-Diphenylhydrazine <sup>C</sup>	0	--	--	3.6E-01	2.0E+00	--	--	3.6E-01	2.0E+00	--	--	--	--	--	--	--	--	--	--	3.6E-01	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	6.2E+01	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	6.2E+01	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	6.2E+01	8.9E+01	--	--	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	--	--	6.2E+01	8.9E+01
Endrin	0	8.6E-02	3.6E-02	5.9E-02	6.0E-02	8.6E-02	3.6E-02	5.9E-02	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	5.9E-02	6.0E-02
Endrin Aldehyde	0	--	--	2.9E-01	3.0E-01	--	--	2.9E-01	3.0E-01	--	--	--	--	--	--	--	--	--	--	2.9E-01	3.0E-01



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	5.3E+02	2.1E+03	--	--	5.3E+02	2.1E+03	--	--	--	--	--	--	--	--	--	--	5.3E+02	2.1E+03
Fluoranthene	0	--	--	1.3E+02	1.4E+02	--	--	1.3E+02	1.4E+02	--	--	--	--	--	--	--	--	--	--	1.3E+02	1.4E+02
Fluorene	0	--	--	1.1E+03	5.3E+03	--	--	1.1E+03	5.3E+03	--	--	--	--	--	--	--	--	--	--	1.1E+03	5.3E+03
Foaming Agents	0	--	--	5.0E+02	--	--	--	5.0E+02	--	--	--	--	--	--	--	--	--	--	--	5.0E+02	--
Guthion	0	--	1.0E-02	--	--	--	1.0E-02	--	--	--	--	--	--	--	--	--	--	--	1.0E-02	--	--
Heptachlor <sup>C</sup>	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	5.2E-01	3.8E-03	7.9E-04	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	7.9E-04	7.9E-04
Heptachlor Epoxide <sup>C</sup>	0	5.2E-01	3.8E-03	3.9E-04	3.9E-04	5.2E-01	3.8E-03	3.9E-04	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	3.9E-04	3.9E-04
Hexachlorobenzene <sup>C</sup>	0	--	--	2.8E-03	2.9E-03	--	--	2.8E-03	2.9E-03	--	--	--	--	--	--	--	--	--	--	2.8E-03	2.9E-03
Hexachlorobutadiene <sup>C</sup>	0	--	--	4.4E+00	1.8E+02	--	--	4.4E+00	1.8E+02	--	--	--	--	--	--	--	--	--	--	4.4E+00	1.8E+02
Hexachlorocyclohexane	0	--	--	2.6E-02	4.9E-02	--	--	2.6E-02	4.9E-02	--	--	--	--	--	--	--	--	--	--	2.6E-02	4.9E-02
Alpha-BHC <sup>C</sup>	0	--	--	9.1E-02	1.7E-01	--	--	9.1E-02	1.7E-01	--	--	--	--	--	--	--	--	--	--	9.1E-02	1.7E-01
Hexachlorocyclohexane	0	--	--	9.1E-02	1.7E-01	--	--	9.1E-02	1.7E-01	--	--	--	--	--	--	--	--	--	--	9.1E-02	1.7E-01
Gamma-BHC <sup>C</sup> (Lindane)	0	9.5E-01	--	9.8E-01	1.8E+00	9.5E-01	--	9.8E-01	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	9.8E-01	1.8E+00
Hexachlorocyclopentadiene	0	--	--	4.0E+01	1.1E+03	--	--	4.0E+01	1.1E+03	--	--	--	--	--	--	--	--	--	--	4.0E+01	1.1E+03
Hexachloroethane <sup>C</sup>	0	--	--	1.4E+01	3.3E+01	--	--	1.4E+01	3.3E+01	--	--	--	--	--	--	--	--	--	--	1.4E+01	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	--	--	--	2.0E+00	--	--	--	--	--	--	--	--	--	--	--	2.0E+00	--	--
Indeno (1,2,3-cd) pyrene <sup>C</sup>	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Iron	0	--	--	3.0E+02	--	--	--	3.0E+02	--	--	--	--	--	--	--	--	--	--	--	3.0E+02	--
Isophorone <sup>C</sup>	0	--	--	3.5E+02	9.6E+03	--	--	3.5E+02	9.6E+03	--	--	--	--	--	--	--	--	--	--	3.5E+02	9.6E+03
Kepone	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	--	--	--	--	--	--	--	--	0.0E+00	--	--
Lead	0	2.0E+02	2.3E+01	1.5E+01	--	2.0E+02	2.3E+01	1.5E+01	--	--	--	--	--	--	--	--	--	2.0E+02	2.3E+01	1.5E+01	--
Malathion	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	--	--	--	--	--	--	--	--	1.0E-01	--	--
Manganese	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	--	--	--	--	--	--	--	--	5.0E+01	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	4.7E+01	1.5E+03	--	--	4.7E+01	1.5E+03	--	--	--	--	--	--	--	--	--	--	4.7E+01	1.5E+03
Methylene Chloride <sup>C</sup>	0	--	--	4.6E+01	5.9E+03	--	--	4.6E+01	5.9E+03	--	--	--	--	--	--	--	--	--	--	4.6E+01	5.9E+03
Methoxychlor	0	--	3.0E-02	1.0E+02	--	--	3.0E-02	1.0E+02	--	--	--	--	--	--	--	--	--	--	3.0E-02	1.0E+02	--
Mirex	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	--	--	--	--	--	--	--	--	0.0E+00	--	--
Nickel	0	2.6E+02	2.9E+01	6.1E+02	4.6E+03	2.6E+02	2.9E+01	6.1E+02	4.6E+03	--	--	--	--	--	--	--	--	2.6E+02	2.9E+01	6.1E+02	4.6E+03
Nitrate (as N)	0	--	--	1.0E+04	--	--	--	1.0E+04	--	--	--	--	--	--	--	--	--	--	--	1.0E+04	--
Nitrobenzene	0	--	--	1.7E+01	6.9E+02	--	--	1.7E+01	6.9E+02	--	--	--	--	--	--	--	--	--	--	1.7E+01	6.9E+02
N-Nitrosodimethylamine <sup>C</sup>	0	--	--	6.9E-03	3.0E+01	--	--	6.9E-03	3.0E+01	--	--	--	--	--	--	--	--	--	--	6.9E-03	3.0E+01
N-Nitrosodiphenylamine <sup>C</sup>	0	--	--	3.3E+01	6.0E+01	--	--	3.3E+01	6.0E+01	--	--	--	--	--	--	--	--	--	--	3.3E+01	6.0E+01
N-Nitrosodi-n-propylamine <sup>C</sup>	0	--	--	5.0E-02	5.1E+00	--	--	5.0E-02	5.1E+00	--	--	--	--	--	--	--	--	--	--	5.0E-02	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	--	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	--	--
Parathion	0	6.5E-02	1.3E-02	--	--	6.5E-02	1.3E-02	--	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	--	--
PCB Total <sup>C</sup>	0	--	1.4E-02	6.4E-04	6.4E-04	--	1.4E-02	6.4E-04	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	6.4E-04	6.4E-04
Pentachlorophenol <sup>C</sup>	0	5.8E+00	4.5E+00	2.7E+00	3.0E+01	5.8E+00	4.5E+00	2.7E+00	3.0E+01	--	--	--	--	--	--	--	--	5.8E+00	4.5E+00	2.7E+00	3.0E+01
Phenol	0	--	--	1.0E+04	8.6E+05	--	--	1.0E+04	8.6E+05	--	--	--	--	--	--	--	--	--	--	1.0E+04	8.6E+05
Pyrene	0	--	--	8.3E+02	4.0E+03	--	--	8.3E+02	4.0E+03	--	--	--	--	--	--	--	--	--	--	8.3E+02	4.0E+03
Radionuclides	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gross Alpha Activity (pCi/L)	0	--	--	1.5E+01	--	--	--	1.5E+01	--	--	--	--	--	--	--	--	--	--	--	1.5E+01	--
Beta and Photon Activity (mrem/yr)	0	--	--	4.0E+00	4.0E+00	--	--	4.0E+00	4.0E+00	--	--	--	--	--	--	--	--	--	--	4.0E+00	4.0E+00
Radium 226 + 228 (pCi/L)	0	--	--	5.0E+00	--	--	--	5.0E+00	--	--	--	--	--	--	--	--	--	--	--	5.0E+00	--
Uranium (ug/l)	0	--	--	3.0E+01	--	--	--	3.0E+01	--	--	--	--	--	--	--	--	--	--	--	3.0E+01	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	2.0E+01	5.0E+00	1.7E+02	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	1.7E+02	4.2E+03
Silver	0	6.9E+00	--	--	--	6.9E+00	--	--	--	--	--	--	--	--	--	--	--	6.9E+00	--	--	--
Sulfate	0	--	--	2.5E+05	--	--	--	2.5E+05	--	--	--	--	--	--	--	--	--	--	--	2.5E+05	--
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	1.7E+00	4.0E+01	--	--	1.7E+00	4.0E+01	--	--	--	--	--	--	--	--	--	--	1.7E+00	4.0E+01
Tetrachloroethylene <sup>C</sup>	0	--	--	6.9E+00	3.3E+01	--	--	6.9E+00	3.3E+01	--	--	--	--	--	--	--	--	--	--	6.9E+00	3.3E+01
Thallium	0	--	--	2.4E-01	4.7E-01	--	--	2.4E-01	4.7E-01	--	--	--	--	--	--	--	--	--	--	2.4E-01	4.7E-01
Toluene	0	--	--	5.1E+02	6.0E+03	--	--	5.1E+02	6.0E+03	--	--	--	--	--	--	--	--	--	--	5.1E+02	6.0E+03
Total dissolved solids	0	--	--	5.0E+05	--	--	--	5.0E+05	--	--	--	--	--	--	--	--	--	--	--	5.0E+05	--
Toxaphene <sup>C</sup>	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	7.3E-01	2.0E-04	2.8E-03	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	2.8E-03	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	--	--	4.6E-01	7.2E-02	--	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	--	--
1,2,4-Trichlorobenzene	0	--	--	3.5E+01	7.0E+01	--	--	3.5E+01	7.0E+01	--	--	--	--	--	--	--	--	--	--	3.5E+01	7.0E+01
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	5.9E+00	1.6E+02	--	--	5.9E+00	1.6E+02	--	--	--	--	--	--	--	--	--	--	5.9E+00	1.6E+02
Trichloroethylene <sup>C</sup>	0	--	--	2.5E+01	3.0E+02	--	--	2.5E+01	3.0E+02	--	--	--	--	--	--	--	--	--	--	2.5E+01	3.0E+02
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	1.4E+01	2.4E+01	--	--	1.4E+01	2.4E+01	--	--	--	--	--	--	--	--	--	--	1.4E+01	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	--	--	--	--	--	--	--	--	5.0E+01	--
Vinyl Chloride <sup>C</sup>	0	--	--	2.5E-01	2.4E+01	--	--	2.5E-01	2.4E+01	--	--	--	--	--	--	--	--	--	--	2.5E-01	2.4E+01
Zinc	0	1.7E+02	1.7E+02	7.4E+03	2.6E+04	1.7E+02	1.7E+02	7.4E+03	2.6E+04	--	--	--	--	--	--	--	--	1.7E+02	1.7E+02	7.4E+03	2.6E+04

#### Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and  
Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	5.6E+00
Arsenic	1.0E+01
Barium	2.0E+03
Cadmium	9.4E-01
Chromium III	6.2E+01
Chromium VI	6.4E+00
Copper	7.6E+00
Iron	3.0E+02
Lead	1.4E+01
Manganese	5.0E+01
Mercury	4.6E-01
Nickel	1.7E+01
Selenium	3.0E+00
Silver	2.8E+00
Zinc	6.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Permit #:VA0021750	Facility: Lucketts Elementary School
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Rec'd	Parameter Description	QTY AVG	Lim Avg	QTY MAX	Lim Max	Units	CONC MIN	Lim Min	CONC AVG	Lim Avg	CONC MAX	Lim Max	Units
09-Mar-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	4.46	2.0	4.46	2.0	MG/L
06-Apr-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.42	2.0	0.42	2.0	MG/L
08-May-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
05-Jun-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.33	2.0	0.33	2.0	MG/L
06-Jul-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.15	2.0	0.15	2.0	MG/L
07-Oct-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.44	2.0	0.44	2.0	MG/L
05-Nov-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.77	2.0	0.77	2.0	MG/L
04-Dec-2009	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.13	2.0	0.13	2.0	MG/L
08-Jan-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.61	2.0	0.61	2.0	MG/L
04-Feb-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	1.00	2.0	1.00	2.0	MG/L
08-Mar-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	1.86	2.0	1.86	2.0	MG/L
09-Apr-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<1.16	2.0	2.21	2.0	MG/L
10-May-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
04-Jun-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
07-Jul-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
08-Oct-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
09-Nov-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
06-Dec-2010	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
07-Jan-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	0.62	2.0	0.62	2.0	MG/L
03-Feb-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
07-Mar-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
07-Apr-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
04-May-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
06-Jun-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
07-Jul-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
03-Oct-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
03-Nov-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
06-Dec-2011	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
09-Jan-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
06-Feb-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
08-Mar-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
09-Apr-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
03-May-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
10-Jun-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
05-Jul-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
03-Oct-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
05-Nov-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L

06-Dec-2012	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
04-Jan-2013	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
08-Feb-2013	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
05-Mar-2013	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
08-Apr-2013	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
08-May-2013	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
07-Jun-2013	AMMONIA, AS N	NULL	*****	NULL	*****	NULL	NULL	*****	<0.10	2.0	<0.10	2.0	MG/L
09-Mar-2009	BOD5	.0503	0.57	.0503	0.86	KG/D	NULL	*****	7	24	7	36	MG/L
06-Apr-2009	BOD5	.0144	0.57	.0144	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
08-May-2009	BOD5	<.0144	0.57	<.0144	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
05-Jun-2009	BOD5	.0261	0.57	.0261	0.86	KG/D	NULL	*****	3	24	3	36	MG/L
06-Jul-2009	BOD5	.0136	0.57	.0136	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
07-Oct-2009	BOD5	.0121	0.57	.0121	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
05-Nov-2009	BOD5	.0568	0.57	.0568	0.86	KG/D	NULL	*****	10	24	10	36	MG/L
04-Dec-2009	BOD5	<.0114	0.57	<.0114	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
08-Jan-2010	BOD5	.0363	0.57	.0363	0.86	KG/D	NULL	*****	6	24	6	36	MG/L
04-Feb-2010	BOD5	.0424	0.57	.0424	0.86	KG/D	NULL	*****	7	24	7	36	MG/L
08-Mar-2010	BOD5	.0360	0.57	.0360	0.86	KG/D	NULL	*****	5	24	5	36	MG/L
09-Apr-2010	BOD5	.0965	0.57	.0965	0.86	KG/D	NULL	*****	15	24	15	36	MG/L
10-May-2010	BOD5	<.0144	0.57	<.0144	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
04-Jun-2010	BOD5	<.0136	0.57	<.0136	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
07-Jul-2010	BOD5	<.0129	0.57	<.0129	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
08-Oct-2010	BOD5	.0159	0.57	.0159	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
09-Nov-2010	BOD5	.0136	0.57	.0136	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
06-Dec-2010	BOD5	<.0091	0.57	<.0091	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
07-Jan-2011	BOD5	.0273	0.57	.0273	0.86	KG/D	NULL	*****	4	24	4	36	MG/L
03-Feb-2011	BOD5	.0772	0.57	.0772	0.86	KG/D	NULL	*****	12	24	12	36	MG/L
07-Mar-2011	BOD5	.0193	0.57	.0193	0.86	KG/D	NULL	*****	3	24	3	36	MG/L
07-Apr-2011	BOD5	.0193	0.57	.0193	0.86	KG/D	NULL	*****	3	24	3	36	MG/L
04-May-2011	BOD5	.0182	0.57	.0182	0.86	KG/D	NULL	*****	3	24	3	36	MG/L
06-Jun-2011	BOD5	<.0136	0.57	<.0136	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
07-Jul-2011	BOD5	.0242	0.57	.0242	0.86	KG/D	NULL	*****	4	24	4	36	MG/L
03-Oct-2011	BOD5	<.0129	0.57	<.0129	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
03-Nov-2011	BOD5	.0193	0.57	.0193	0.86	KG/D	NULL	*****	3	24	3	36	MG/L
06-Dec-2011	BOD5	.0227	0.57	.0227	0.86	KG/D	NULL	*****	4	24	4	36	MG/L
09-Jan-2012	BOD5	<.0114	0.57	<.0114	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
06-Feb-2012	BOD5	.0114	0.57	.0114	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
08-Mar-2012	BOD5	<.0121	0.57	<.0121	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
09-Apr-2012	BOD5	.0121	0.57	.0121	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
03-May-2012	BOD5	.0848	0.57	.0848	0.86	KG/D	NULL	*****	14	24	14	36	MG/L
10-Jun-2012	BOD5	.0606	0.57	.0606	0.86	KG/D	NULL	*****	10	24	10	36	MG/L
05-Jul-2012	BOD5	.0477	0.57	.0477	0.86	KG/D	NULL	*****	9	24	9	36	MG/L
03-Oct-2012	BOD5	.0363	0.57	.0363	0.86	KG/D	NULL	*****	6	24	6	36	MG/L

05-Nov-2012	BOD5	.0303	0.57	.0303	0.86	KG/D	NULL	*****	5	24	5	36	MG/L
06-Dec-2012	BOD5	.0454	0.57	.0454	0.86	KG/D	NULL	*****	8	24	8	36	MG/L
04-Jan-2013	BOD5	.0182	0.57	.0182	0.86	KG/D	NULL	*****	3	24	3	36	MG/L
08-Feb-2013	BOD5	<.0159	0.57	<.0159	0.86	KG/D	NULL	*****	<2	24	<2	36	MG/L
05-Mar-2013	BOD5	.0129	0.57	.0129	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
08-Apr-2013	BOD5	.0387	0.57	.0387	0.86	KG/D	NULL	*****	6	24	6	36	MG/L
08-May-2013	BOD5	.0193	0.57	.0193	0.86	KG/D	NULL	*****	3	24	3	36	MG/L
07-Jun-2013	BOD5	.0121	0.57	.0121	0.86	KG/D	NULL	*****	2	24	2	36	MG/L
09-Mar-2009	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
06-Apr-2009	PH	NULL	*****	NULL	*****	NULL	6.7	6.0	NULL	*****	7.0	9.0	SU
08-May-2009	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
05-Jun-2009	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
06-Jul-2009	PH	NULL	*****	NULL	*****	NULL	6.7	6.0	NULL	*****	7.0	9.0	SU
07-Oct-2009	PH	NULL	*****	NULL	*****	NULL	6.3	6.0	NULL	*****	6.6	9.0	SU
05-Nov-2009	PH	NULL	*****	NULL	*****	NULL	6.4	6.0	NULL	*****	6.7	9.0	SU
04-Dec-2009	PH	NULL	*****	NULL	*****	NULL	6.5	6.0	NULL	*****	6.9	9.0	SU
08-Jan-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
04-Feb-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
08-Mar-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
09-Apr-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
10-May-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
04-Jun-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
07-Jul-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
08-Oct-2010	PH	NULL	*****	NULL	*****	NULL	6.5	6.0	NULL	*****	6.7	9.0	SU
09-Nov-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
06-Dec-2010	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
07-Jan-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
03-Feb-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
07-Mar-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
07-Apr-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
04-May-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
06-Jun-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
07-Jul-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
03-Oct-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
03-Nov-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
06-Dec-2011	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
09-Jan-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
06-Feb-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
08-Mar-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
09-Apr-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
03-May-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
10-Jun-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
05-Jul-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU

03-Oct-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	6.9	9.0	SU
05-Nov-2012	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
06-Dec-2012	PH	NULL	*****	NULL	*****	NULL	6.5	6.0	NULL	*****	7.0	9.0	SU
04-Jan-2013	PH	NULL	*****	NULL	*****	NULL	6.4	6.0	NULL	*****	6.7	9.0	SU
08-Feb-2013	PH	NULL	*****	NULL	*****	NULL	6.7	6.0	NULL	*****	7.0	9.0	SU
05-Mar-2013	PH	NULL	*****	NULL	*****	NULL	6.8	6.0	NULL	*****	7.2	9.0	SU
08-Apr-2013	PH	NULL	*****	NULL	*****	NULL	6.6	6.0	NULL	*****	7.0	9.0	SU
08-May-2013	PH	NULL	*****	NULL	*****	NULL	6.4	6.0	NULL	*****	6.9	9.0	SU
07-Jun-2013	PH	NULL	*****	NULL	*****	NULL	6.2	6.0	NULL	*****	6.9	9.0	SU
							90th percentile: 7.0						
							10th percentile: 6.6						
09-Mar-2009	TSS	<.0072	0.57	<.0072	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
06-Apr-2009	TSS	.0072	0.57	.0072	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
08-May-2009	TSS	<.0072	0.57	<.0072	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
05-Jun-2009	TSS	.0200	0.57	.0200	0.86	KG/D	NULL	*****	2.30	24	2.30	36	MG/L
06-Jul-2009	TSS	.0164	0.57	.0164	0.86	KG/D	NULL	*****	2.40	24	2.40	36	MG/L
07-Oct-2009	TSS	.0340	0.57	.0340	0.86	KG/D	NULL	*****	5.60	24	5.60	36	MG/L
05-Nov-2009	TSS	.0329	0.57	.0329	0.86	KG/D	NULL	*****	5.80	24	5.80	36	MG/L
04-Dec-2009	TSS	.0148	0.57	.0148	0.86	KG/D	NULL	*****	2.60	24	2.60	36	MG/L
08-Jan-2010	TSS	.0097	0.57	.0097	0.86	KG/D	NULL	*****	1.60	24	1.60	36	MG/L
04-Feb-2010	TSS	.0067	0.57	.0067	0.86	KG/D	NULL	*****	1.10	24	1.10	36	MG/L
08-Mar-2010	TSS	.0187	0.57	.0187	0.86	KG/D	NULL	*****	2.60	24	2.60	36	MG/L
09-Apr-2010	TSS	.0154	0.57	.0154	0.86	KG/D	NULL	*****	2.40	24	2.40	36	MG/L
10-May-2010	TSS	<.0072	0.57	<.0072	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
04-Jun-2010	TSS	<.0068	0.57	<.0068	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
07-Jul-2010	TSS	<.0064	0.57	<.0064	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
08-Oct-2010	TSS	.0119	0.57	.0119	0.86	KG/D	NULL	*****	1.50	24	1.50	36	MG/L
09-Nov-2010	TSS	.0170	0.57	.0170	0.86	KG/D	NULL	*****	2.50	24	2.50	36	MG/L
06-Dec-2010	TSS	.0045	0.57	.0045	0.86	KG/D	NULL	*****	1.00	24	1.00	36	MG/L
07-Jan-2011	TSS	.0068	0.57	.0068	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
03-Feb-2011	TSS	.0431	0.57	.0431	0.86	KG/D	NULL	*****	6.70	24	6.70	36	MG/L
07-Mar-2011	TSS	.0386	0.57	.0386	0.86	KG/D	NULL	*****	6.00	24	6.00	36	MG/L
07-Apr-2011	TSS	.0109	0.57	.0109	0.86	KG/D	NULL	*****	1.70	24	1.70	36	MG/L
04-May-2011	TSS	.0206	0.57	.0206	0.86	KG/D	NULL	*****	3.40	24	3.40	36	MG/L
06-Jun-2011	TSS	.0085	0.57	.0085	0.86	KG/D	NULL	*****	1.40	24	1.40	36	MG/L
07-Jul-2011	TSS	.0091	0.57	.0091	0.86	KG/D	NULL	*****	1.50	24	1.50	36	MG/L
03-Oct-2011	TSS	.0103	0.57	.0103	0.86	KG/D	NULL	*****	1.60	24	1.60	36	MG/L
03-Nov-2011	TSS	<.0064	0.57	<.0064	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
06-Dec-2011	TSS	.0204	0.57	.0204	0.86	KG/D	NULL	*****	3.60	24	3.60	36	MG/L
09-Jan-2012	TSS	<.0057	0.57	<.0057	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L
06-Feb-2012	TSS	<.0057	0.57	<.0057	0.86	KG/D	NULL	*****	<1.00	24	<1.00	36	MG/L

08-Mar-2012	TSS	.0079	0.57	.0079	0.86	KG/D	NULL	*****	1.30	24	1.30	36	MG/L
09-Apr-2012	TSS	.0157	0.57	.0157	0.86	KG/D	NULL	*****	2.60	24	2.60	36	MG/L
03-May-2012	TSS	.0454	0.57	.0454	0.86	KG/D	NULL	*****	7.50	24	7.50	36	MG/L
10-Jun-2012	TSS	.0248	0.57	.0248	0.86	KG/D	NULL	*****	4.10	24	4.10	36	MG/L
05-Jul-2012	TSS	.0673	0.57	.0673	0.86	KG/D	NULL	*****	12.7	24	12.7	36	MG/L
03-Oct-2012	TSS	.0539	0.57	.0539	0.86	KG/D	NULL	*****	8.90	24	8.90	36	MG/L
05-Nov-2012	TSS	.0696	0.57	.0696	0.86	KG/D	NULL	*****	11.5	24	11.5	36	MG/L
06-Dec-2012	TSS	.1016	0.57	.1016	0.86	KG/D	NULL	*****	17.9	24	17.9	36	MG/L
04-Jan-2013	TSS	.0472	0.57	.0472	0.86	KG/D	NULL	*****	7.8	24	7.8	36	MG/L
08-Feb-2013	TSS	.0159	0.57	.0159	0.86	KG/D	NULL	*****	2.00	24	2.00	36	MG/L
05-Mar-2013	TSS	.0064	0.57	.0064	0.86	KG/D	NULL	*****	1	24	1	36	MG/L
08-Apr-2013	TSS	.0245	0.57	.0245	0.86	KG/D	NULL	*****	3.80	24	3.80	36	MG/L
08-May-2013	TSS	.0830	0.57	.0830	0.86	KG/D	NULL	*****	12.9	24	12.9	36	MG/L
07-Jun-2013	TSS	.1096	0.57	.1096	0.86	KG/D	NULL	*****	18.1	24	18.1	36	MG/L

Calculation for Total Ammonia values at different pH and Temperature than listed in the Water Quality Standards (VR680-21-01.14B)

pH = 7.0 standard units

Temperature = 26°C

THE ONE HOUR AVERAGE CONCENTRATION OF AMMONIA (IN MG/L AS UN-IONIZED  $\text{NH}_3$ ) CAN BE CALCULATED BY USING THE FOLLOWING FORMULAS.

Acute criteria concentration =  $0.52/\text{FT}/\text{FPH}/2$

where: FT = Final Temperature

$$\text{FT} = 10^{0.03(20 - \text{TCAP})}; \text{TCAP} < T < 30^\circ\text{C}$$

TCAP = 25°C; when trout and other sensitive coldwater species are absent

$$\text{FT} = 10^{0.03(20 - 25)}$$

$$\text{FT} = 10^{0.03(-5)}$$

$$\text{FT} = 10^{-0.15} = 0.71$$

where: FPH = Final pH

$$\text{FPH} = \frac{(1 + 10^{7.4 - \text{pH}})}{1.25}; 6.5 < \text{pH} < 8.0$$

$$\text{FPH} = 2.8$$

Therefore: ACUTE CRITERIA CONCENTRATION =  $0.52/0.71/2.8/2 = .13$

CONVERSION FROM UN-IONIZED TO TOTAL AMMONIA CAN BE CALCULATED BY USING THE FOLLOWING FORMULAS.

TOTAL AMMONIA CRITERIA = CALCULATED UN-IONIZED AMMONIA CRITERIA DIVIDED BY FRACTION OF UN-IONIZED AMMONIA

Where: Fraction of un-ionized ammonia =  $1/(10^{\text{pKa} - \text{pH}} + 1)$

where:  $\text{pKa} = 0.09018 + (2729.92/(273.2 + \text{temperature } ^\circ\text{C}))$   
 $\text{pKa} = 9.21$

$$\begin{aligned} \text{Fraction of un-ionized ammonia} &= 1/(10^{9.21 - 7.0} + 1) \\ &= 0.006 \end{aligned}$$

THEREFORE: TOTAL ACUTE AMMONIA CRITERIA = CALCULATED UN-IONIZED AMMONIA CRITERIA DIVIDED BY FRACTION OF UN-IONIZED AMMONIA

$$\text{TOTAL ACUTE AMMONIA CRITERIA} = 0.13/0.006 = 21.6 \text{ mg/l}$$

$$21.6 \text{ mg/l} \times 0.824 = 17.8 \text{ mg/l Ammonia As N}$$



Calculation for Total Ammonia values at different pH and Temperature than listed in the Water Quality Standards (VR680-21-01.14B)

pH = 7.0 standard units

Temperature = 26°C

THE 4-DAY AVERAGE CONCENTRATION OF AMMONIA (IN MG/L AS UN-IONIZED  $\text{NH}_3$ ) CAN BE CALCULATED BY USING THE FOLLOWING FORMULAS.

Chronic criteria concentration =  $0.8/\text{FT}/\text{FPH}/\text{RATIO}$

where: FT = Final Temperature

$$\text{FT} = 10^{0.03(20 - \text{TCAP})}; \text{TCAP} < T < 30^\circ\text{C}$$

TCAP = 20°C; when trout and other sensitive coldwater species are absent

$$\text{FT} = 10^{0.03(20 - 20)}$$

$$\text{FT} = 10^0 = 1$$

where: FPH = Final pH

$$\text{FPH} = \frac{(1 + 10^{7.4 - \text{pH}})}{1.25}; 6.5 < \text{pH} < 8.0$$

$$\text{FPH} = 2.8$$

$$\text{RATIO} = \frac{20.25 \times (10^{7.7 - \text{pH}})}{(1 + 10^{7.4 - \text{pH}})}; 6.5 < \text{pH} < 7.7$$

$$\text{RATIO} = 28.9$$

Therefore: CHRONIC CRITERIA CONCENTRATION =  $0.8/1/2.8/28.9 = 0.0099$

CONVERSION FROM UN-IONIZED TO TOTAL AMMONIA CAN BE CALCULATED BY USING THE FOLLOWING FORMULAS.

TOTAL CHRONIC AMMONIA CRITERIA = CALCULATED UN-IONIZED AMMONIA CRITERIA DIVIDED BY FRACTION OF UN-IONIZED AMMONIA

Where: Fraction of un-ionized ammonia =  $1/(10^{\text{pKa} - \text{pH}} + 1)$

where:  $\text{pKa} = 0.09018 + (2729.92/(273.2 + \text{temperature } ^\circ\text{C}))$   
 $\text{pKa} = 9.21$

Fraction of un-ionized ammonia =  $1/(10^{9.21 - 7.0} + 1)$

$$= 0.006$$

THEREFORE: TOTAL CHRONIC AMMONIA CRITERIA = CALCULATED UN-IONIZED AMMONIA CRITERIA DIVIDED BY FRACTION OF UN-IONIZED AMMONIA

$$\text{TOTAL CHRONIC AMMONIA CRITERIA} = 0.0099/0.006 = 1.65 \text{ mg/l}$$

$$1.65 \times .824 = 1.4 \text{ mg/l Ammonia as N}$$

Analysis of the Lucketts ES effluent data for ammonia

The statistics for ammonia are:

Number of values = 1  
Quantification level = .2  
Number quantification = 0  
Expected value = 10  
Variance = 36.00001  
C.V. = .6  
97th percentile = 24.33418  
Statistics used = Reasonable potential assumptions - Type 2 data

The WLAs for ammonia are:

Acute WLA = 17.8  
Chronic WLA = 1.4  
Human Health WLA = ----

The limits are based on chronic toxicity and 1 samples/month.

Maximum daily limit = 2.047605  
Average monthly limit = 2.047605

DATA

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6/13/2013 11:34:37 AM

Facility = Lucketts Elementary  
Chemical = Chlorine  
Chronic averaging period = 4  
WLAa = 0.019  
WLAc = 0.011  
Q.L. = 0.1  
# samples/mo. = 28  
# samples/wk. = 7

Summary of Statistics:

# observations = 1  
Expected Value = .2  
Variance = .0144  
C.V. = 0.6  
97th percentile daily values = .486683  
97th percentile 4 day average = .332758  
97th percentile 30 day average = .241210  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity  
Maximum Daily Limit = 1.60883226245855E-02  
Average Weekly limit = 9.8252545713861E-03  
Average Monthly Limit = 8.02152773888032E-03

The data are:

0.2

Public Notice – Environmental Permit

**PURPOSE OF NOTICE:** To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

**PUBLIC COMMENT PERIOD:** July 18, 2013 to August 16, 2013

**PERMIT NAME:** Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

**APPLICANT NAME, ADDRESS AND PERMIT NUMBER:** Loudoun County Public Schools  
21000 Education Court, Ashburn, VA 20148  
VA0021750

**NAME AND ADDRESS OF FACILITY:** Lucketts Elementary School  
14550 James Madison Highway, Leesburg, VA 20176

**PROJECT DESCRIPTION:** Loudoun County Public Schools has applied for a reissuance of a permit for the public Lucketts Elementary School. The applicant proposes to release treated sewage wastewaters from an elementary school, community center and volunteer fire station at a rate of 0.0063 million gallons per day into a water body. This permit reissuance also includes an expanded rate of 0.01175 million gallons per day. Domestic sludge is not generated at this facility. The facility proposes to release the treated sewage in the Limestone Branch, UT, in Loudoun County, Virginia in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, biochemical oxygen demand, total suspended solids, dissolved oxygen, ammonia as N, E. coli and total residual chlorine.

**HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING:** DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

**CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:** The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Douglas Frasier  
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193  
Phone: (703) 583-3873 E-mail: Douglas.Frasier@deq.virginia.gov Fax: (703) 583-3821